Nesom, G.L. 2013. A new species of *Erythranthe* sect. *Simiola* (Phrymaceae) from California serpentine. Phytoneuron 2013-70: 1–6. Published 26 September 2013. ISSN 2153 733X

A NEW SPECIES OF *ERYTHRANTHE* SECT. *SIMIOLA* (PHRYMACEAE) FROM CALIFORNIA SERPENTINE

GUY L. NESOM
2925 Hartwood Drive
Fort Worth, Texas 76109
guynesom@sbcglobal.net

ABSTRACT

Erythranthe percaulis Nesom, **sp. nov.**, is known only from the type collection from Serpentine Canyon of the Feather River in Plumas Co., California. It is characterized by its totally glabrous vestiture, very small leaves on relatively widely spaced nodes, small calyces, and small, yellow corollas. The closest relative is hypothesized to be *E. nudata*, another serpentine endemic of California.

KEY WORDS: *Erythranthe* sect. *Simiola*, new species, Serpentine Canyon

The species described here is known only from the type collection but it is so distinctive that the description is offered with confidence.

Erythranthe percaulis Nesom, **sp. nov.** **TYPE: USA. California.** Plumas Co.: Serpentine Canyon about 3 mi E of Rich Bar, East Branch North Fork Feather River, ca. 2800 ft, 28 May 1980, *J.T. Howell 53705* with H.K. Wagnon (holotype: CAS! Fig. 1; isotype: OSC! Fig. 2). According to John Thomas Howell's collection notebook at CAS, the collection was apportioned into 6 duplicates.

Species placed in *Erythranthe* sect. *Simiola* (Nesom 2012) by virtue of its yellow flowers and elongate upper calyx lobe. Similar to *Erythranthe nudata* in its completely glabrous vestiture, terete stems, purple stems and leaves, greatly reduced cauline leaves, spreading pedicels, and serpentine habitat but different in its shorter (vs. elongate) leaves, much smaller fruiting calyces, and tiny corollas.

Annual herbs, fibrous-rooted. **Stems** 2–5, erect or slightly ascending from the base, 7–28 cm, terete, purplish, apparently somewhat glaucous, internodes 2–5 cm. **Leaves** basal and cauline, basal and lowermost cauline petiolate, 5–10 mm, blades 7–10 mm, petioles 5–10 mm, cauline abruptly sessile, even-sized or slightly smaller distally, narrowly ovate, rhombic-elliptic, ovate to lanceolate, elliptic-lanceolate to ovate or oblong-ovate, 4–10 mm, often spreading at right angles to the stem, dark purple, margins entire or proximal leaves shallowly sinuate with 2–4 shallow, serrations. **Flowers** in 4–6 pairs mostly on the distal 2/3 of the stem. **Fruiting pedicels** 15–35 mm, longest proximally ascending, straight, slightly bent at the calyx attachment. **Calyces** 5-lobed, in fruit urceolate to urceolate-campanulate, (4–)5–6 mm, purple or purple-tinged, lobes deltate to triangular, 0.5–1 mm, upper lobe slightly longer, all lobes slightly or not at all curved inward, not closing the orifice. **Corollas** yellow, few or no red dots on throat floor, palate ridges purple, densely hairy, tube-throat cylindric-funnelform, 4–6 mm, exserted 2–3 mm beyond calyx margin, limb bilabiate, 4–5 mm in width (pressed). **Anthers** glabrous, included. **Styles** glabrous; stigma above the level of the anthers (apparently herkogamous). **Capsules** broadly ovoid, strongly flattened, ca. 3 mm, short-stipitate, included (capsule apex reaching calyx lobe sinuses).

After seeing the CAS specimen and reckoning that it probably represented an undescribed species, I searched intently on June 15, 2013, in the area of the collection locality but did not find any plants matching the Howell collection. Upon seeing the OSC duplicate, however, which bears additional individuals (possibly 7 or 8 individuals appear to be represented on the two sheets cited here), the evidence is convincing enough to warrant a formal description. Future searches for additional plants and populations will be aware of the highly reduced habit, which probably makes them difficult to see.

CALIFORNIA ACADEMY
OF SCIENCES
№ 900501
- 6 dups according to
Howell's notebook
CALIFORNIA ACADEMY OF SCIENCES
Plants of the Sierra Nevada, California
53705
Mimulus guttatus Fisch. ex DC.
det. C. Best 1981
53705. CALIFORNIA ACADEMY OF SCIENCES
Plants of the Sierra Nevada, California
Mimulus ? geniculatus
Serpentine Canyon about 3 miles east of
Rich Bar, East Branch North Fork Feather
River, el. ca. 2800 ft., Plumas County.
John Thomas Howell
H. Keith Wagnon
May 28, 1980
CALIFORNIA ACADEMY OF SCIENCES
SCIENCES
cm
0 1 2 3 4 5 6 7 8 9 10
copyright reserved

Figure 1. *Erythranthre percaulis*. Holotype, CAS.

Figure 2. *Erythranthre percaulis*. Isotype, OSC.

Figure 3. Cauline leaves of *Erythranthe percaulis*, from OSC isotype.

Figure 4. Calyces of *Erythranthe percaulis*, from OSC isotype.

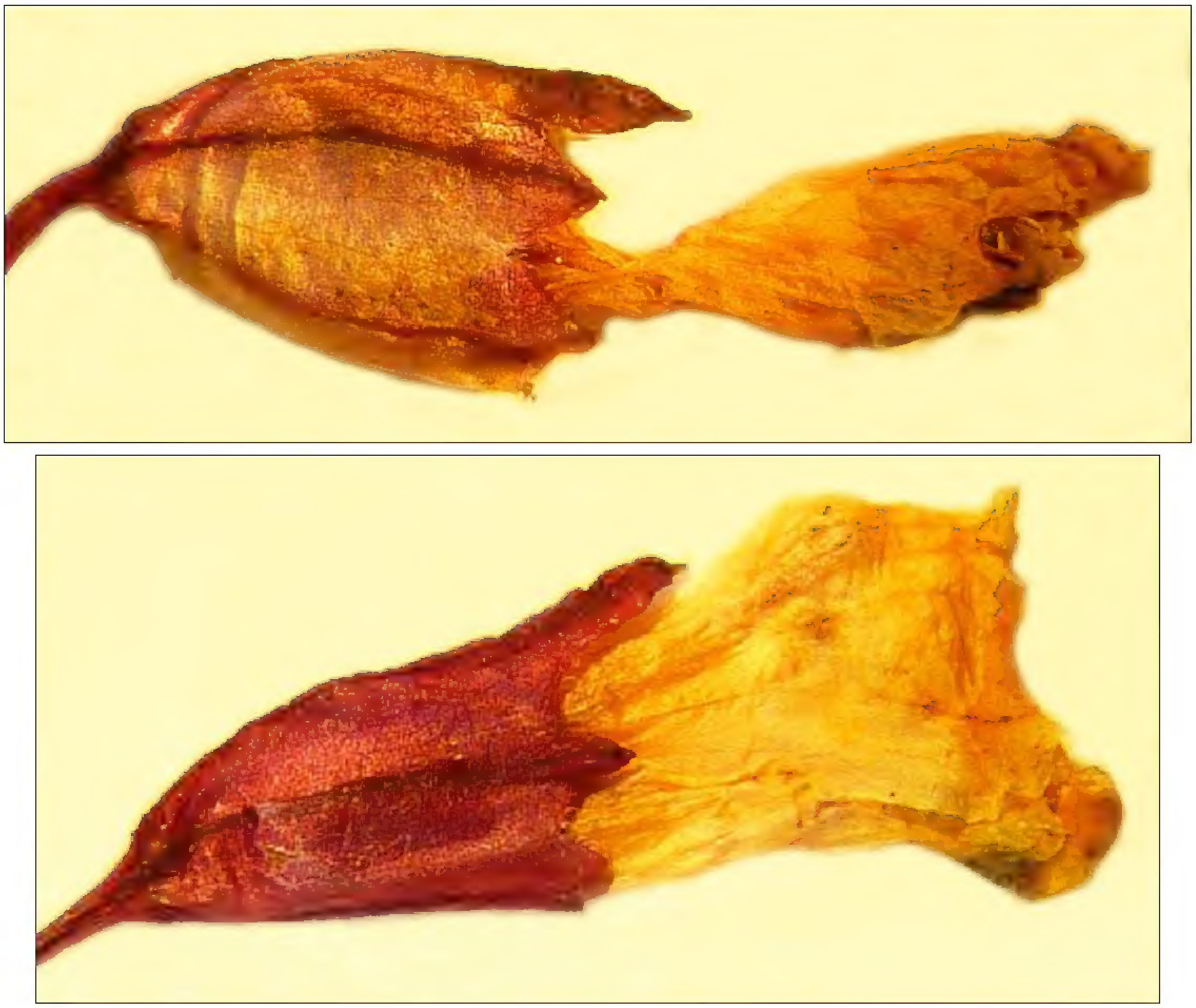

Figure 5. Calyces and corollas of *Erythranthe percaulis*, from OSC isotype.

Because of the tiny leaves on relatively widely spaced nodes, plants of *Erythranthe percaulis* appear relatively bare, mostly stems (hence the epithet: *per*-, exceedingly, -*caulis*, stemmed). The corollas are tiny, but judging from the long-exserted style and stigma, the apparent herkogamous arrangement of stigma and anthers, and the distinctly ornamented inner portion of the corolla (colored, densely villous palate ridges), the flowers probably are chasmogamous and allogamous.

It seems likely that *Erythranthe percaulis* is most closely related to other sect. *Simiola* species of northwestern California — particularly the narrowly endemic *E. nudata* (Curran ex Greene) Nesom (Colusa, Glenn, Lake, Mendocino, Napa, and Sonoma counties) and a species soon to be described (by Jason Sexton and coauthors, Madroño, in press) from Butte and Plumas counties, both of which share completely glabrous vestiture, annual duration, and a serpentine habitat. *Erythranthe nudata* has more elongate leaves and relatively large, chasmogamous and allogamous flowers, while the other has highly dissected leaves and very small, probably cleistogamous and autogamous flowers. No other species of sect. *Simiola* is close in morphology to *E. percaulis*. *Erythranthe nasuta* (Greene) Nesom and *E. arvensis* (Greene) Nesom both produce small flowers in the general size of *E. percaulis* but the flowers of both are plesiogamous and presumably autogamous and the vestiture and other features of each also differs from *E. percaulis*.

ACKNOWLEDGEMENTS

I'm grateful! to the staff at CAS (Shannon Hartman) and OSC (Stephen Meyers) for providing images of the holotype and isotype and to Tom Daniel for checking Howell's collection notebook on file at CAS. This study has been supported by the Flora of North America Association in connection with preparation of the taxonomic treatment of *Erythranthe*.

LITERATURE CITED

Nesom, G.L. 2012. Taxonomy of *Erythranthe* sect. *Simiola* (Phrymaceae) in the USA and Mexico. Phytoneuron 2012-40: 1–123.